Annual Examination 2010 | **MATH** | HYDERABAD BOARD

Time: 15 Minutes — M. Marks: 15

Note: (1) Attempt all the questions. Each questions carries ONE mark.
(2) Do not copy down the part questions in your answer book. Write only the answer in full against the proper number of the Question and its part, and MCQs question paper must be attached with answer book.
(3) The Code of your question paper must be mentioned in bold letters in the answer book.

Section-A

Multiple Choice Question (MCQs)

NOTE: **Choose the correct answer for each from the given options:**

(i) {0, 1, 2, 3 ....} is the set of ....
(a) Prime Numbers (b) Intigers Number (c) Whole number (d) Even Numbers

(ii) If every element of set A is also an element of the Set B, then set A is called a .... of a Set B.
(a) Power set (b) Equal Set (c) Equvalent set (d) Subset

(iii) In scientific notation 0.000573 is written as ....
(a) 57.3×10^{-2} (b) 57.3×10^{-3} (c) 57.3×10^{-4} (d) 57.3×10^{-5}

(iv) $\frac{\log_5 3}{\log_5 2}$
(a) $\log_5 2$ (b) $\log_5 3$ (c) $\log_3 2$ (d) $\log_2 3$

(v) The degree of the polynomial $x^2 + xy^2 + y$ is............
(a) 2 (b) 3 (c) 4 (d) 1

(vi) $(\sqrt{x} + \sqrt{y})(\sqrt{x} - \sqrt{y})$
(a) $(\sqrt{x} + \sqrt{y})^2$ (b) $(\sqrt{x} - \sqrt{y})^2$ (c) $(x - \sqrt{y})$ (d) $(x - y)$

(vii) The L.C.M of $x^3 - y^3$ and $x^6 - y^6$ is ....
(a) $x^3 - y^3$ (b) $x^3 + y^3$ (c) $x^6 + y^6$ (d) $x^6 - y^6$

(viii) In a right angled triangle the side opposite to right angle is called.
(a) Perpendicular (b) Hypotenuse (c) Altitude (d) None of these

(ix) If $(x - 2)(x + 3) = 0$, then x = ...
(a) -2, -3 (b) 2, 3 (c) 2, - 3 (d) -2, 3

(x) | -5 | avsikyte vakye it -5 is ....
(a) -5 (b) +5 (c) ± 5 (d) – (-5)

(xi) In 12, 13, 4, 4, 5, 7, 9 then mode is ....
(a) 3 (b) 5.5 (c) 4 (d) 9

(xii) A series contains values 15, 19, 13, 11, 14, 1 its median is ....
(a) 12 (b) 13 (c) 14 (d) 14.5

(xiv) $\begin{bmatrix} 4 & 0 \\ 0 & 4 \end{bmatrix}$ is a .... matrix.
(a) Rectangular (b) Unit (c) Scalar (d) Diagonal

(xv) The value of $\sin 30^\circ$ is.............
(a) 2 (b) $\frac{1}{2}$ (c) -2 (d) $\frac{1}{\sqrt{}}$

(xvi) The value of SinCot60° is ....
(a) $\frac{\sqrt{}}{3}$ (b) $\frac{2}{\sqrt{}}$ (c) $\frac{1}{\sqrt{}}$ (d) $\sqrt{3}$

(xvii) $1 + \tan^2 45^\circ = \sec^2$..............
(a) 30° (b) 90° (c) 60° (d) 45°

(xviii) $\frac{a^7}{a^3}$ = ...
(a) a^4 (b) a^{10} (c) a^{21} (d) None of these

(xix) The Polynomial expression $x^2 + 7x + 3$ w.r.t the terms is called
(a) Binomial (b) Trinomial (c) Monomial (d) None of these

(xx) The characteristic of log 5.723 is ....
(a) 1 (b) -1 (c) 0 (d) 2

TIME ALLOWED: 2:40 MINUTES — M.MARKS: 80

SECTION – B

NOTE: **Attempt Any TEN of the Following Questions. All Quistions Carry Five Marks.** 50

Q-02: If A = { a,b} , B = (2,3) and C= {3,4} Find the value of.
(i) A x (BnC) (ii) A x (BUC)

Q-03: Simplify:
(i) $\frac{-20(29 - 3q)^{12}(4 - 3r)^3}{-4(2p - 3q)^9(4 - 3r)}$
(ii) $\sqrt[4]{3}$

Q-04: Find the value of $x^2 + \frac{1}{x^2}$, when $x = 2 + \sqrt{3}$

Q-05: Simplify with the help of logarithms $\frac{57.26}{\sqrt{0.382}}$

Q-06: Fine the value of $a^2 + b^2$ when a + b = 4, ab = 3

Q-07: For what value of "a" will $9x^3 - 6x^2 + 3x$ – abe exactly divisible by $x^2 - 2x + 3$?

Q-08: Factorize any TWO of the following:
(i) $a^8 + a^4 + 1$ (ii) $x^3 - x - 2y + 8y^3$ (iii) $x^{12} - y^{12}$

Q-09: Fine the square root of $a^4 + 10a^3 + 31a^2 + 30a + 9$

Q-10: if $A = \begin{bmatrix} 1 & 2 \\ 2 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 5 \\ 3 & 0 \end{bmatrix}$ than prove that AB ≠ BA

Q-11: Define any TWO of the following and draw the figures.
(i) Line Segment (ii) Opposite Rays (iii) Adjacent Angles

Q-12: Take triangle PQR and draw its medians.

Q-13: Find the solution sat of any ONE of the following equation.
(i) $\frac{\sqrt{4y + 2 +}}{13} = 2$ (ii) $|3x - 4| = 22$

Q-14 Define Median and give its merits and demerits.
OR
Two number in the ratio 7.8 and sum is 105. find the numbers.

Q-15: Prove that $\frac{\sin\theta}{1 - \cos\theta} = \frac{1 + \cos\theta}{\sin\theta}$

SECTION – C

NOTE: **Answer Any THREE of the Following Questions. All Quistions Carry Equal Marks.** 30

Q-16: (a) Solve triangle ABC when m∠C = 90°, m∠A = 45° and a = 10cm.
(b) A pole 14m high on the bank of a stream makes an angle of 30° with a place on the opposite bank, find the breadth of the stream.

Q-17: (a) Eleminate "x" from the equation $x - \frac{1}{x^2} = 2a$ $x^2 + \frac{1}{x^2} = b^2$
(b) Find the factor $x^3 - 7x + 6$ by using Reminder theorem.

Q-18: (a) If two lines intersect, then the vertical angles are congruent. Prove it.
(b) If two angles of a triangle are congruent, the sides opposite to them are also congruent prove it.

Q-19: (a) The sum of the measures of the angles of a triangle is 180°. prove it.
(b) The measures of the angles of triangle are in the ratio 3:4:5, state the type of the triangle.

Q-20: (a) If a perpendicular is drawn from the centre to a chord of a circle, it bisects the chord. Prove it.
(b) In a circle of radius 5cm, a chord measuring 8 cm has been drawn. Find its distance from the centre of the circle.